

REMARKS

Claims 1-34 have been canceled. The rejections in the office action mailed May 28, 2009 are moot.

New claims 35-62 have been added. No new matter has been introduced.

The following are Applicants' remarks on the patentability of the new claims over the prior art references cited by the Examiner.

Claim 35

Kostylev and Chen do not describe and would not have made obvious "said phase change material of said initial layer and said phase change material of said final layer have a lower crystallization temperature and a higher crystallization speed than phase change materials in a remainder of said plurality of layers in each of said plurality of multiple-layer structures," as recited in claim 35.

In rejecting claim 1 (which has a similar limitation), the Examiner acknowledges that Kostylev is silent with respect to this limitation.

Applicants note that Chen discloses a structure having phase change layers 22 interleaved with interface layers 24 in which the interface layers 24 are made of material that forms crystalline lattice structures that do not merge with the crystalline lattice formed in the phase change material 22 (paragraph [0030]). Fig. 5 of Chen shows the resistivity of the memory material as a function of the crystallizing thermal pulse time (also see paragraph [0032]). In Chen's memory device, the resistivity stays steady at a first resistance level until an inflection point is reached in which the resistivity quickly changes to a second lower level. A layer of chalcogenide will crystallize rather quickly once pockets of crystallization have been formed in the layer. The resistivity then remains steady again until pockets are formed in the next layer, and so forth. This is because the interface layers prevent the pockets from expanding between the layers.

In Chen, the four phase change material layers 22 are made of the same material. Chen does not disclose or suggest said phase change material of said initial layer and said phase change material of said final layer have a lower crystallization temperature and a higher crystallization speed than phase change materials in “a remainder of said plurality of layers in each of said plurality of multiple-layer structures,” as recited in claim 35.

A structure having an initial layer and a final layer with higher crystallization speeds than the other layers (as recited in claim 35) allows the initial and final layers to more quickly form crystal lattices and thus lower the resistivity of the structure quicker than could be achieved in the Chen structure.

For these reasons, Applicants respectfully request that claim 35 be allowed.

Claim 48 is patentable for at least similar reasons as those applied to claim 35.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner. Any circumstance in which the applicant has made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims. Any circumstance in which the applicant has amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

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Serial No. : 10/589,915
Filed : July 18, 2007
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Attorney's Docket No.: 17184-0003US1 / 3121/US

Please apply \$130 for the Petition for Extension of Time fee and any other charges or credits to deposit account 06-1050, referencing 17184-0003US1.

Respectfully submitted,

Date: September 28, 2009

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